Requirements Checklist for LANCE Elements

The aim of this checklist is to provide a brief overview of the core requirements for LANCE Near Real-Time (NRT) elements. For full details please refer to the LANCE Requirements document: 423-RQMT-002 Available from https://ops1-cm.ems.eosdis.nasa.gov/cm2/

In the LANCE Requirements document, the requirements are broken down in to the following categories:

- System Requirements
- Ingest Requirements
- Data Processing Requirements
- Data Distribution Requirements
- User Services and Support Requirements
- Algorithm and Product Validation Requirements

In addition the LANCE element will help develop an Appendix specific to each LANCE element with specific requirements and/or exceptions to the core requirements. This Appendix should be modeled after the current LANCE provider appendices (e.g. 423-RQMT-002_D_OMI Requirements) available from https://ops1-cm.ems.eosdis.nasa.gov/cm2/.

A. Summary of key requirements

A.1. As appropriate, provide L0, L1 and L2 data products within 3 hours of observation (L3 products will vary).

A.2. Short Name should have the _NRT suffix *e.g.* AIRIBRAD_NRT.005

A.3. Provide HTTPS[1] interfaces for data distribution.

A.4. Implement redundant processing and distribution servers to ensure operational availability.

A.5. Register metadata in CMR.[2]

A.6. Ensure metadata provided to CMR includes a "CollectionDataType" of "NEAR_REAL_TIME" to identify/discover NRT collections.

A.7. Provide full-resolution browse imagery to GIBS.

A.8. Participate in the LANCE Element telecons and User Working Group meetings.

A.9. Create Digital Object Identifiers (DOI) for NRT products.

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[1] Not yet implemented in all LANCE Elements

[2] The EOSDIS Common Metadata Repository (CMR) will provide a single source of unified metadata to better serve end users and application developers. With the introduction of CMR, new metadata fields will be required by May 2015. For further information, the UMM documents that are currently under ESDIS Standards Office Review: https://earthdata.nasa.gov/eso/cmr-reviews. Please email eso-staff@lists.nasa.gov if you would like to provide input for this document.

B. System requirements

Servers, software and hardware should:

B.1. Be capable of ingesting data at the rate provided by data provider[1].

B.2. Process and distribute data to users within 3 hours of observation.

B.3. Implement redundancy to ensure a goal of 100% operational availability.

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[1] Existing data providers are: EOSDIS Data and Operations System (EDOS) for AIRS, MLS, MISR, MODIS, OMI, OMPS and VIIRS, and the Japan Aerospace Exploration Agency (JAXA) for AMSR2.

C. Data Distribution

C.1 Provide basic data subscription services to all users.

C.2 Maintain a minimum of a 7-day rolling archive and a maximum of 14 days. Deviations to this will be reflected in respective Appendices.

C.3 Integrate with EOSDIS Earthdata Login (formally known as URS) and restrict data access to users with a valid Earthdata login account.

D. Metrics and Metadata Requirements

D.1 Provide metrics to ESDIS Metric System (EMS) for Ingest, Archive and Distribution as described in the ICD between EMS and the Data Providers[1].

D.2 Short name should have the _NRT suffix *e.g.* AIRIBRAD_NRT.005

D.3 Create Digital Object Identifiers (DOIs) for collection level products[2]

D.4 For all LANCE collections, include CMR element "CollectionDataType" set to "NEAR_REAL_TIME" to identify/discover NRT collections e.g.

<CollectionDataType>NEAR_REAL_TIME</CollectionDataType>

D.5 Register data granules in CMR within an average of 15 minutes after products are available for download from Element.

D.6 Remove data granule metadata records from CMR when the product is no longer available

D.7 The following metadata elements will be required by May 2015:

Metadata Standard Name

Metadata Standard Version

Science Keywords

Temporal Extent Information

Spatial Extent Information

Platform

Instrument

Campaign[3]

Note: Metadata Standard Name and Metadata Standard Version have recently been added to the ECHO 10 xml schema. The latest ECHO10 schema can be found at: https://git.earthdata.nasa.gov/projects/EMFD/repos/echo-schemas/browse/schemas/10.0/Collection.xsd

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[1] Document number 423-47-01 - https://ops1-cm.ems.eosdis.nasa.gov/cm2/

[2] The LANCE UWG recommended DOIs be created for LANCE data. DOI wiki: https://wiki.earthdata.nasa.gov/display/DOIsforEOSDIS/Digital+Object+Identifiers+%28DOIs%29+for+EOSDIS.

[3] Example for campaign entry: <Campaign><ShortName>LANCE</ShortName><LongName>Land, Atmosphere Near real-time Capability for EOS</LongName></Campaign>

E. LANCE User Services and Support Requirements

E.1 Provide web content and links to data, FAQs Help, Algorithm Theoretical Basis Document (ATBD) or equivalent, User Guide and System status for the Earthdata LANCE website.

E.2 Utilize the ESDIS (Kayako) User Support Tool (UST) to provide user services and direct users to DAACs or other user service teams as appropriate for user questions.

E.3 Inform users via email of planned down time and gaps in NRT data.

E.4 Nominate a point of contact to participate in bi-weekly LANCE telecons.

E.5 Provide updates for and participate in LANCE UWG meetings, which are held twice a year.

F. LANCE Algorithm and Product Validation

F.1 Coordinate with the Science Team to make available LANCE products using the latest algorithms.

F.2 Provide products from both existing and new / latest algorithms (for the period specified in the LANCE Element Appendix) to give users sufficient time to transition to the latest algorithms. Provide information on the differences

between the algorithms on the Earthdata LANCE website.

F.3 Work with the science team to compare NRT products to standard products and identify and document the differences.

F.4 Provide information on quality differences between NRT and standard science data products and provide descriptions of the differences on earthdata.nasa.gov

G. GIBS Imagery Requirements

G.1 Develop and baseline the GIBS Imagery Provider ICD Appendix – *to be coordinated by Matt Cechini.*

G.2 Provide full-resolution daily composite and/or granule-based visualizations of science data parameters.

G.3 Provide imagery products to GIBS within 45 minutes, on a best effort basis, after products are available for download from Element.

G.4 Provide imagery products to GIBS after metadata has been registered with ECHO/CMR.

Key Points of Contact

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